30. The system of Claim 28, wherein said music piece is assigned a first location in said combined music space proximate to a second locations assigned to a second music piece having a second plurality of feature vectors defined by similar by a second set of music attributes similar to said first set, said first and said second locations forming a cluster.

31. The system of Claim 20, wherein said plurality of feature vectors are each formulated using responses to a plurality of questions asked of a plurality of music listeners after said plurality of music listeners are played a plurality of music samples.

32. The system of Claim 1, further comprising a music space, wherein each of said feature vectors provides a location for said plural music samples within said music space, said inferential engine comparing said plurality of feature vectors using said locations.

REMARKS

Claims 1-17 and 19-32 are pending. No Claims have been amended.

Rejection under 35 U.S.C. §102(b):

Claims 1-17 and 19-32 are rejected under 35 U.S.C. §102(b) as being fully met by Cluts (USPN 5,616,876). Applicants respectfully traverse the rejection as follows.

The Examiner states:

> Cluts discloses the creation of a playlist of musical songs. The "more like" function, the use of a seed song and the style tables read on applicant's feature vectors for the provision of the playlist reading on applicant's inferential engine. The production of the playlist involves subjectivity and the emotional feelings of the user.

Applicants submit that the system set forth in Claim 1, in particular the feature vectors defining perceived music attributes are not taught or suggested by Cluts. Claim 1 sets forth feature vectors defining perceived music attributes. In an embodiment described in the specification, the emotional content of the song can be collected by polling a large set of music experts and listeners about "perceptual" qualities of music. Therefore, the subjectivity or "feelings" are those of the user and are not encoded attributes of the songs, artists or albums as disclosed in Cluts.

In contrast to the feature vectors which define perceived music attributes as set forth in Applicants' Claim 1, the style tables disclosed in Cluts provide information about a single

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dimensional characteristic of music. This characteristic is associated with a number of different "styles." The importance of each style to the description of the song is reflected by weighting each style as it pertains to each song (Cluts, col. 14, lines 39-44). Cluts discloses a framework where a set of editorial, hand-coded data concerning styles of music is available to a system. Cluts teaches that the data is limited to the styles of music and specifically, styles assigned at 2 levels: to an artist, and possibly to an album (Cluts, col. 19, lines 11-29). The user of the system selects songs using by selecting the permissible styles of music, and by specifying a seed song and asking for songs with similar styles (the "more like" function). The system then returns a set of candidate songs that the user can then edit, (*i.e.*, choose to include or exclude from the play list). For example, with no intent to limit the invention, suppose a user is interested in "happy, up tempo country music songs". Within the Cluts system, the user inputs a country song that the user enjoys. If the listener is not very familiar with country music, and hence will not recognize any of the songs produced in the play list, the user will not be able to include happy up tempo songs and exclude others because information about which songs are happy and up tempo is not available within the system. In contrast, Applicants feature vectors allow the user to explicitly request happy, up tempo country music and will be presented with a play list that only includes happy, up tempo country music. Unlike the system disclosed in Cluts, Applicant's feature vectors represent and satisfy the user's feelings.

As described in Applicant's specification, the claimed feature vector provides a framework for a multidimensional characterization of music. The appearance of multidimensional rather than unidimensional attributes as disclosed in Cluts creates the need for a more complicated model of the music samples then could be achieved with style tables in order to make similarity comparisons. Thus, Cluts neither teaches nor suggests a feature vector, which defines perceived music attributes of a music sample.

Claim 1 also sets forth an inferential engine. The inferential engine involves a set of functions that operate on the set of multidimensional features provided in the feature vectors in order to compare the multidimensional features to user inputs to provide play lists to the user. Applicants could find no teaching or suggestion of an inferential engine as claimed in Claim 1.

Accordingly, for the above reasons the feature vectors defining perceived music attributes of a music sample and the inferential engine which acts upon the feature vectors are not anticipated by Cluts and Claim 1 is allowable over the cited reference.

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Regarding Claim 15, the claim sets forth a user interface for receiving a user request for a music playlist, where the user request is formulated into a search vector value. Claim 15 also sets forth a plurality of feature vectors defining feature vector values corresponding to perceived attributes of music; and an inferential search engine for generating a playlist of selected music, the music selection being made by comparing the plurality of feature vector values to the search vector value. Applicants could find not teaching or suggestion of a user interface for receiving a user input, which can be formulated into a search vector value. In contrast, Cluts teaches using a "more like" function, which "uses the current song as a 'seed song' and selects other songs that match the style criteria associated with the seed song." (Cluts, col. 17, lines 10-12). For these reasons and for the reasons stated above regarding Claim 1, Claim 15 is allowable over the cited reference.

Claim 20 sets forth a plurality of feature vectors defined by a first set of music attributes allocated to a music piece; and a modeling module which creates a plurality of music spaces by performing a similarity analysis of said feature vectors, said similarity analysis establishing boundaries for said music spaces. For the reasons stated above, Applicants could find no teaching or suggestion in Cluts of feature vectors. In addition, there is no teaching of a modeling module that creates a plurality of music spaces by performing a similarity analysis. In contrast, Cluts discloses a system in which songs are classified according to style. Because music in Cluts is classified according to a single dimension, the problems that arise when music is simultaneously classified according to a number of dimensions do not arise in Cluts, and thus Cluts makes no mention of them. Claim 20 sets forth creating a music space using the similarity between songs in such multi-attribute situations. Accordingly, Claim 20 is allowable over the cited reference.

Claims 2-14 and 32 depend from Claim 1 and are therefore allowable for at least the same reasons as Claim 1 as well as for the novel features which they add. Claims 16, 17, and 19 depend from Claim 15 and are therefore allowable for at least the same reasons as Claim 15 as well as for the novel features which they add. Claims 21-31 depend from Claim 20 and are therefore allowable for at least the same reasons as Claim 20 as well as for the novel features which they add.

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CONCLUSION

For the above reasons, pending Claims 1-17 and 19-32 are now in condition for allowance and allowance of the application is hereby solicited. If the Examiner has any questions or concerns, the Examiner is requested to telephone Applicant's Attorney at 949-718-5200.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on April 6, 2001.

Attorney for Applicant(s) — Date of Signature: 4-6-01

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